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Amendments to the claims

1-12 (Canceled)

13. (Previously presented) A hybridization chamber comprising:

- a) a base plate wherein a base cavity for holding a first array component is formed in said base plate;
- b) a lid comprising at least one component port for immobilizing a second array component;
- c) a sealant between said base plate and said lid forming an airtight seal.

14. (Original) The chamber according to claim 13, wherein said second array component is a fiber optic bundle.

DI 15. (Currently amended) The chamber according to claim 13 or 14, further comprising at least one alignment feature, wherein said at least one alignment feature facilitates alignment of said lid with said base plate.

16. (Currently amended) The chamber according to claim 13 or 14, further comprising at least one alignment feature, wherein said at least one alignment feature is a male and female fitting.

17. (Currently amended) The chamber according to claim 13 or 14, wherein said first array component is a microtiter plate.

18. (Currently amended) The chamber according to claim 13 or 14, wherein said chamber is connected to at least one fluid handling device.

19-28 (Canceled)

29. (Currently amended) A hybridization chamber comprising:

- a) a base plate comprising a base cavity;

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Serial No.: 09/606,369
Filed: June 28, 2000

b) a first array component comprising a plurality of assay locations, said first array component in said base cavity;

[[b)] c) a lid comprising at least a plurality of first component ports, wherein each of said component ports comprises a second array component, wherein said second array components align with corresponding assay locations of said first array component; and

[[c)] d) a sealant between said base plate and said lid forming an airtight seal.

30. (Previously presented) The chamber according to claim 29, wherein said first array component is a microtiter plate.

31. (Previously presented) The chamber according to claim 29, wherein said second array component is a fiber optic bundle.

32. (Currently amended) The chamber according to claim 29, 30 or 31, further comprising at least one alignment feature wherein, said at least one alignment feature facilitates alignment of said lid with said base plate.

33. (Previously presented) The chamber according to claim 32, wherein said at least one alignment feature is a male and female fitting.

34. (Currently amended) The chamber according to claim 29, 30 or 31, wherein said chamber is connected to at least one fluid handling device.

35 (New) The chamber according to claim 32, wherein said chamber is connected to at least one fluid handling device.

36. (New) The chamber according to claim 32, wherein said second array component comprises:

a) a substrate comprising discrete sites; and

b) a population of microspheres comprising first and second subpopulations distributed on said discrete sites, wherein each subpopulation comprises a distinct bioactive agent.

37. (New) A hybridization chamber comprising:

Serial No.: 09/606,369
Filed: June 28, 2000

- a) a base plate comprising a base cavity;
- b) a first array component in said base cavity, wherein said first array component comprises a plurality of assay locations;
- c) a lid comprising a plurality of component ports, wherein said component ports comprise a second array component each second array component comprising a plurality of bioactive agents, wherein each of said second array components is aligned with one of said assay locations; and
- d) a sealant between said base plate and said lid forming an airtight seal.

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